

# **STRUVITE CRYSTALLIZATION**

## **Abstract**

The present invention provides a method and apparatus for removing phosphorus from phosphorus containing waste. In one embodiment, the method is preferably carried out by contacting the phosphorus containing waste with a non-cellular membrane and precipitating phosphorus from the waste as struvite. Another aspect of the invention includes a method of removing phosphorus from phosphorus containing sewage comprising filtrates and biosolids. The removal of phosphorus as struvite occurs in two stages as primary and secondary removal. In the primary removal process, the sewage from a dewatering unit is contacted with a first polymeric membrane reactor and the phosphorus is removed as primary struvite. Subsequently Mg is added so as promote struvite formation and the secondary removal process of struvite. In the secondary removal process, the sewage from GBT Filtrate well or Centrifuge Liquor well is contacted with a second monomolecular membrane and the phosphorus is removed as secondary struvite.

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